8. A gas diffusion electrode operable within a fuel cell comprising a fibrous carbonaceous material.

9. The gas diffusion electrode as claimed in claim 8, wherein the gas diffusion electrode comprises a thickness of about 5 μm or less.

10. The gas diffusion electrode as claimed in claim 8, wherein the fibrous carbonaceous material comprises carbon nanotubes.

11. The gas diffusion electrode as claimed in claim 8, wherein the fibrous carbonaceous material comprises vapor-grown carbon fibers.

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12. The gas diffusion electrode as claimed in claim 8, wherein the fibrous carbonaceous material comprises a mixture of carbon nanotubes and vapor-grown carbon fibers.

13. The gas diffusion electrode as claimed in claim 12, wherein the mixture includes a ratio of carbon nanotubes to vapor-grown carbon fibers that ranges from about 0:1 to about 9:1.

14. A fuel cell, comprising:

a first electrode and a second electrode facing the first electrode; and

a proton conductor disposed between the first electrode and the second electrode, wherein at least one of the first electrode and the second electrode comprises a fibrous carbonaceous material formed on the proton conductor.

15. The fuel cell as claimed in claim 14, wherein at least one of the first electrode and the second electrode comprises a thickness of about 5 μm or less.

16. The fuel cell as claimed in claim 14, wherein the fibrous carbonaceous material is selected from the group consisting of carbon nanotubes, vapor-grown carbon fibers and mixtures thereof.

17. The fuel cell as claimed in claim 16, wherein the fibrous carbonaceous material comprises a catalyst material in an amount of about 20% by weight or less.

18. The fuel cell as claimed in claim 17, wherein the catalyst material is selected from the group consisting of platinum and alloys thereof.

19. The fuel cell as claimed in claim 18, wherein the mixture includes a ratio of carbon nanotubes to vapor-grown carbon fibers that ranges from about 0:1 to about 9:1.

20. The fuel cell as claimed in claim 14, wherein the first electrode comprises a fuel electrode and the second electrode comprises an oxygen electrode.

21. A fuel cell, comprising:

a first electrode, a second electrode, and a proton conductor disposed between the first electrode and the second electrode, wherein at least one of the first electrode and the second electrode comprises a carbonaceous material selected from the group consisting of at least one type of carbon nanotube, a graphite fibrous material, and mixtures thereof.

22. The fuel cell as claimed in claim 21, wherein the carbonaceous material consists essentially of a mixture of the at least one type of carbon nanotube and a graphite fibrous material.

23. The fuel cell as claimed in claim 22, wherein the graphite fibrous material includes a vapor-grown carbon fiber.

24. The fuel cell as claimed in claim 23, wherein the mixture includes a ratio of the at least one type of carbon nanotube to the vapor-grown carbon fiber that ranges from about 0:1 to about 9:1.

25. The fuel cell as claimed in claim 23, wherein the mixture includes a ratio of the at least one type of carbon nanotube to the vapor-grown carbon fiber that ranges from about 1:1 to about 4:1.

26. The fuel cell as claimed in claim 22, wherein the carbonaceous material contains a catalyst material in an amount of about 20% by weight or less.

27. A method of producing a fuel cell, the method comprising the steps of:

providing a proton conductor, a first electrode and a second electrode, wherein at least one of the first electrode and second electrode comprises a fibrous carbonaceous material; and

forming the first electrode and the second electrode on the proton conductor such that the proton conductor is disposed between the first electrode and the second electrode.

28. The method as claimed in claim 27, wherein the step of forming includes spraying the fibrous carbonaceous material on the proton conductor.

29. The method as claimed in claim 27, wherein the step of forming includes dripping the fibrous carbonaceous material onto the proton conductor.

30. The method as claimed in claim 27, wherein the fibrous carbonaceous material is selected from the group consisting of at least one type of carbon nanotube, a graphite fibrous material and mixtures thereof.

31. The method as claimed in claim 30, wherein a ratio of the at least one type of carbon nanotube to the graphite fibrous material in the carbonaceous material ranges from about 0:1 to about 9:1.

32. The method as claimed in claim 31, wherein the carbonaceous material includes a metal component having a catalytic activity ~~in an amount of about 20% by weight or less.~~